



The Spokesman

NATIONAL LUBRICATING GREASE INSTITUTE

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"N. L. G. I. Grease Classification By Number" Officially Adopted

M. B. CHITTICK, CHAIRMAN

Technical Committee, National Lubricating Grease Institute

As a result of the requests coming from both the manufacturers of lubricating greases and special lubricants, from consumers and from various scientific associations interested in grease, the National Lubricating Grease Institute have been working for several years on such a classification. As a result of these efforts, the Institute adopted at their Annual Convention held at the Stevens Hotel in Chicago on October 2nd and 3rd, 1939, a classification. In the past there have been no accepted commercial practices that have established the body or consistencies of greases and the adopted classification is designed to eliminate this problem. It is to be emphasized that this classification is in no way a standard or a specification of quality, but only assures the manufacturer of lubricating greases and the consumers of lubricating greases of securing uniform bodies or consistencies when using this classification. In this latter respect, the classification is comparable to the classification adopted by the Society of Automotive Engineers for crank case oils and gear oils based on

viscosity alone. The Institute is applying for copyright on this classification, which is given herewith—

Grade	A. S. T. M. Worked Penetration
No. 0	355 — 385
No. 1	310 — 340
No. 2	265 — 295
No. 3	220 — 250
No. 4	175 — 205
No. 5	130 — 160
No. 6	85 — 115

By action of the Institute in Annual Convention, this classification becomes effective at the end of an eighteen months period, namely March 1, 1941. However, it has been indicated that many manufacturers will adopt the classification immediately and already several industrial consumers of grease have adopted this classification in their recommendation for grease lubricating.

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CONVENTION HIGHLIGHTS

Wide interest was shown by the well attended sessions of the 7th Annual Convention of the National Lubricating Grease Institute. Space allows us to give here only a listing of the addresses which helped make the Convention an unqualified success. The entire membership of the Institute joins in expressing sincere appreciation to the speakers and exhibitors for their splendid cooperation.

Experience of a Traveler "Painting in Oil"*

J. W. SAYBOLT, *President*
Penola, Inc. and Lubricating Sales Manager
Standard Oil Co., of N. J.

A. J. ("Dad") Stevens' Contribution to the Manufacture and Progress of Lubricating Greases

RALPH R. MATTHEWS
Battenfeld Grease and Oil Corp.
Kansas City, Mo.

Superfinish and Its Relation to Lubrication

MR. D. A. WALLACE, *President*
Chrysler Division, Chrysler Corp.
Detroit, Mich.

Personal "Up to the Minute" Impressions Abroad*

J. R. BATTENFELD, *President*
Battenfeld Grease and Oil Corp.
Kansas City, Mo.

Various Methods of Applying Lubricants

MR. JAMES I. CLOWER
Associate Professor Machine Design
Virginia Polytechnic Institute
Blacksburg, Va.

Modern Equipment for the Proper Application of Industrial Greases

MR. A. J. JENNINGS, *General Sales Manager*
The Farval Corp.

"Fatty Acids" Their Use in Grease Manufacture

MR. D. V. STINGLEY, *Technical Associate*
Armour and Co.
Chicago, Ill.

Automotive Lubrication Equipment

MR. FOSTER HOLMES, *Vice-President, Charge of Sales*
Lincoln Engineering Co.
St. Louis, Mo.

The New Industrial Frontier—Human Relationships

MR. A. A. NICHOLSON, *Manager Personnel Dept.*
The Texas Co.
New York, N. Y.

Some Experience in Trade Association Service

MR. J. E. MOORHEAD, *Executive Secretary*
Pennsylvania Grade Crude Oil Association
Oil City, Pa.

Progress of Lubrication in the Steel Mills

MR. C. C. PECU, *Lubrication Engineer*
Bethlehem Steel Corporation
Lackawanna, N. Y.

Use of Synthetic Fats in Grease Manufacture

DR. D. A. BURWELL
Alox Corporation
Niagara Falls, N. Y.

Hypoid Gear Lubrication

MR. A. O. WILLEY and C. S. PRUTTON
Lubri-Zol Sales Corporation
Cleveland, Ohio

Lubricating Grease Nomenclature Related to Use

MR. RAYMOND SHAW, *President*
Chek-Chart Corporation
Chicago, Ill.

* No Paper Available.

NOTICE

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GEORGE W. MILLER . . . Editor
498 Winspear Avenue, Buffalo, N. Y.

Favorable "Echoes" of the 7th Annual Convention

Mr. F. C. Kerns
The Texas Company
135 E. 42nd Street
New York, N. Y.

Dear Mr. Kerns:

I just want to take this opportunity of thanking you for the fine honor extended us in the invitation to read a paper at the recent National Lubricating Grease Institute meeting, also for the courtesies shown me.

It was a real pleasure to attend and we wish the Institute the best of luck and good wishes.

With friendliest regards,

Very truly yours,
Lincoln Engineering Company.
E. P. Stuart,
Major Oil Division

Mr. F. C. Kerns
National Lubricating Grease Institute
c/o The Texas Company
135 East 42nd Street
New York, N. Y.

Dear Mr. Kerns:

Mr. Petrie returned today from the National Lubricating Grease Institute Convention in Chicago and reports very fine meetings and well attended audiences. He brought with him copies of all of the papers and you may be assured that we will review same here at the plant.

We thank your committee very kindly for allowing us to present this SUPER-FINISH paper, and wish to take this opportunity for inviting yourself or any members of your organization to visit us here at the Chrysler Plant.

Sincerely,

A. M. Swigert,
Production Research Div.
Chrysler Jefferson Plant.

What Car Makers Say*

LATEST FACTORY RECOMMENDATIONS

GRAHAM TRANSMISSION OVERDRIVE CHANGED

The construction of the transmission overdrive used on Graham cars has been changed slightly. A solenoid has been installed in the transmission unit, similar to that used by Chrysler and Packard, which cuts in the overdrive at a given speed. Lubrication recommendations remain unchanged.

STEERING COLUMN GEAR SHIFT LUBRICATION

There have been some reports from the field regarding hard shifting of the gears on models having the gear shift control on the steering column. An investigation of this situation discloses that in most cases hard shifting of the gear shift mechanism is more a question of correct adjustment of associated levers and parts than of lubrication.

On Chrysler units, the gear shift mechanism requires lubrication at two points — a thin film of Wheel Bearing Grease on the gear shift lever fulcrum slide at the steering wheel, and Water Pump Grease on the clover leaf plate under the shifter tube lower lever. For proper operation of the gear shift mechanism it is essential that the position of the various levers throughout the unit, from the hand lever down to the small levers on the transmission case, be at the correct angle on the shafts. This adjustment should be made only by an authorized car dealer.

The gear shift lever mechanism used on Chevrolet cars employs a vacuum cylinder to assist the manual effort. The servicing of this vacuum cylinder is quite complicated and lubrication of the pistons and associated mechanism should be done by an authorized Chevrolet dealer. Here again it is important that the position of the various levers be at the correct angle.

The operation of the steering column gear shifts is quite similar on the various makes of cars, and any cases of hard shifting of the mechanism should be referred to an authorized dealer, as the difficulty is seldom due to lack of lubrication, but can be remedied by proper adjustment of levers and linkages.

PACKARD DOOR HINGE LUBRICATION

Packard cars for 1938-39 have an oil hole only in the top front door hinge. This is somewhat difficult to get at as it is up under the cowl inside. The other hinges have no oil holes or provision for lubrication except a small slot at the top of the hinge where oil with hand oil can may be applied

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and flow down the surface. Wipe off the excess.

BALL AND TRUNNION TYPE UNIVERSAL

JOINTS USED IN CHRYSLER UNITS

The early type Detroit Ball and Trunnion universal joints used on Chrysler units were provided with a plug. Chrysler's recommendation for servicing this early design is to remove the plug every 12,000 miles and apply 1 oz. only of Universal Joint Grease. This original recommendation is still in effect for joints equipped with a plug.

Starting in 1937, however, and continuing to date, the Detroit Ball and Trunnion type of universal joint, while of the same general design, is not equipped with a lubrication plug, and therefore requires disassembly for lubrication.

The manufacturer's 1937 published recommendations for servicing these joints read as follows:

"Under ordinary conditions the initial lubrication of the universal joints is sufficient to last the life of the car. Should it become necessary for any reason to replace the lubricant, the universal joints should be disassembled and all parts thoroughly cleaned. The joint body should then be packed with 1 1/4 oz. of the recommended lubricant."

In 1938 Chrysler changed these recommendations somewhat. The 1938 published recommendations read:

"The universal joints are lubricated when they are assembled at the factory, and, due to the design and protection given them, will not require additional lubrication for about 30,000 or 40,000 miles of ordinary driving."

In 1939 Chrysler recommends a definite mileage of 15,000 miles for disassembly and repacking of these joints, and it is recommended that this work be done by an authorized dealer. This latest recommendation has been made retroactive for 1937 and 1938 Chrysler, De Soto, Dodge and Plymouth models equipped with Detroit Ball and Trunnion type joints. They are as follows:

Chrysler Royal 6 (C16)—1937
Chrysler Royal 6 (C18)—1938
Chrysler Imp. 8 (C19)—1938
De Soto 6 (S3)—1937
De Soto 6 (S5)—1938
Dodge 6 (D5)—1937
Dodge 6 (D8)—1938
Plymouth P3, P4—1937
Plymouth P5, P6—1938

(Continued on page 4)

(Continued from page 3)

1939 Chrysler Imp. 8 (C23) cars without transmission overdrive, and early production with overdrive are equipped with Detroit Ball and Trunnion type universal joints. Later production with overdrive uses Detroit Cross type joints. When Fluid Drive is used on model C23 cars, transmission overdrive becomes standard equipment and Detroit Cross type universal joints are used.

CHEVROLET ECONOMY CARS

For a number of years Chevrolet has manufactured what are known as "Economy" Cars for fleet users and for taxicab service. These cars can be identified by a plate which is fastened onto the instrument panel, showing the recommendation of Engine Oil to be used in the transmission. Also, there is a plate on the valve push rod cover, showing the recommended valve clearances for the special engine used in these cars.

An engine oil heavier than SAE 20 should never be used in the special engine with which the "Economy" cars are equipped. A special transmission, in which an engine oil no heavier than SAE 40 is recommended, is used on these jobs.

Up until 1937, when hypoid gears became standard equipment on Chevrolet models, SAE 40 Engine Oil was recommended for the rear axles of the "Economy" jobs. On units assembled with hypoid gears, starting in 1937, the differential recommendation is SAE 90 Hypoid Lubricant the year 'round, except for extremely low temperatures (below 0°) when an SAE 80 Hypoid Lubricant should be used.

AMERICAN BANTAM (60) —1938-39—A change has been made in the cooling system capacity: 5½ qt. is required on late 1939 models.

An oilless type bushing is being used on the pedal shaft on late 1939 models, requiring no lubrication.

NASH — 1938-39 MODELS — The manufacturer has changed the mileage recommendation for starter and generator lubrication from 5,000 to 1,000 miles.

PACKARD — The manufacturer has made some changes in recommended tire pressures on various Packard models; they are as follows:

Model	Inflation Pressures	
	Tire Size	Front Rear
120 Conv. Coupe 1936	7.00-16	22 22
7 Pass. 1937	7.00-16	26 30
Others 1937	7.00-16	24 26
Six — 1937	6.50-16	24 26
Super 8—1938 (7 Pass.)	7.50-16	26 32

Sedan	7.50-16	26	30
Coupes	7.50-16	26	28
12 — 1938-39 7 Pass.	8.25-16	28	32
Others	8.25-16	28	30
Six — 1938-39	6.50-16	24	26
120 (8)—1938-39 7 Pass	7.00-16	26	30
Others	7.00-16	24	26

Special long wheelbase 120 (8) and Super 8 — 1938-39 models will be found in the field, used as hearses, ambulances, etc. These models have three universal joints and a propeller shaft center bearing. The three universal joints are serviced the same as on conventional models, and the propeller shaft center bearing requires no lubrication. Serial numbers on these models are preceded by the letter "A".

AMERICAN BANTAM—New Model is the 65. Minor lubrication changes from 1939, including the elimination of one lubrication point and change in cooling system capacity.

BUICK—Six series of cars are offered for 1940. Two of these, the 50 and the 70, are entirely new. All models equipped with oil filter. Numerous changes in engineering details and design.

CHRYSLER—Six models and 26 body styles for 1940. Many detail changes and improvements, including increased wheelbases. Fluid Drive available on additional models. Transmission overdrive optional equipment on all models except the Royal and Traveler, standard on the Crown Imperial. In all cases where Fluid Drive is used, overdrive is essential.

CROSLY—Information not yet available.

DESOTO—Outstanding features are increased engine horsepower, longer wheelbase and greater interior roominess. Some changes in lubrication details. New to the line this year is a Convertible Coupe in the Custom series.

DODGE—Models for 1940 are the Luxury Liner, De Luxe (D14) and Luxury Liner Special (D17). A new improved engine, longer wheelbase and greater interior roominess are featured. Several changes in lubrication details.

FORD—Models are the V-8 and the De Luxe V-8. The V-8 is available with either 85 or 60 horsepower engine. Important features include a finger-tip gearshift mounted on the steering column. Front and rear springs are metal covered on the De Luxe, which also features a new improved spring suspension. A new Business Coupe has been added to the De Luxe line.

GRAHAM—Lubrication details much the same as for 1939.

HUDSON—Outstanding among 1940 features is the new front suspension with Auto-Poise Control. New 6 oz. cans of Hudsonite Clutch Compound, suitable for a single filling, are now available.

HUPMOBILE—Inactive at present—more news later.

LINCOLN ZEPHYR—A newly designed car, embodying many advanced features, including increased engine power and finger-tip gearshift mounted on the steering post. Two new body types added this year—a Club Coupe and a Continental Cabriolet.

MERCURY—Many engineering improvements, including a finger-tip gearshift on the steering column, and a new torsion bar ride stabilizer. A convertible Sedan has been added to the line.

OLDSMOBILE—The most unusual feature of design is the new Hydromatic Drive which provides propulsion from the engine to the rear wheels by a hydraulic drive. This is optional equipment and when used there is no clutch or clutch pedal in the car at all.

PLYMOUTH—The 1940 model is completely new and considerably larger than previous models. The transmission is entirely new and the improved steering post gearshift is standard equipment throughout the line.

PONTIAC—Offers four chassis with 17 body models for 1940, including a new low-priced Special Six and a new luxury eight, called the Torpedo Eight. Many improvements in body design and engineering details.

NASH—All Models All Years — The manufacturer has changed the recommended mileage interval for lubrication of front and rear wheel bearings from 5,000 to 10,000 miles.

Nash now recommends that universal joints requiring disassembly for lubrication be lubricated only when disassembled for some other purpose.

NASH—1938-39 Models — The factory now recommends that 6 pt. instead of 6½ pt. of oil be used in the transmission with overdrive on these models.

PACKARD—All Models All Years—Packard has changed the recommended mileage interval for lubrication of general chassis points, universal joint spline and oil can points on chassis and under hood from 2,000 to 1,000 miles. The crankcase drain mileage interval has been reduced from 2,000-3,000 miles to 1,000-2,000 miles.

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